

User Manual

Ladder**LOGIX**



Industrial Data-Logger cum
Cloud Gateway

Revision List

Revision	Date	Description
1.3.0.0	27 April 2014	Match firmware release 1.3.0.0
1.4.1.0	16 June 2014	Match firmware release 1.4.1.0
1.6.0.0	1 July 2014	Match firmware release 1.6.0.0

Preface

The data and illustrations found in this document are not binding. We reserve the right to modify our products in line with our policy of continuous product development. The information in this document is subject to change without notice and should not be considered a commitment by M2MLogger. M2MLogger assumes no responsibility for any errors that may appear in this document.

The document uses following pictures to get the reader's attention:

Symbol	Description
	Note! Important information to avoid configuration that can cause problems and therefore should be read carefully.
	Additional information about how to get the most out of LadderLOGIX

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1 Warranty

M2MLogger warrants that, for a period of 365 days from date of shipment of product, the product shall be free from defects under normal use. Under this warranty it is obligation of M2MLogger to replace any device found defective (within the warranty period) and has been returned to M2MLogger by buyer at buyer's expense. All shipping and insurance costs both ways are the responsibility of buyer. The warranties do not include damage due to negligence, improper installation or operation, accident, tampering with warranty seal or other conditions other than normal use which might cause the Products to fail.

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2 Support

To obtain fast and simple support for your LadderLOGIX, please use our website <http://www.m2mlogger.com>. Here you will find the latest documentation, configuration utilities, drivers etc. You can also contact our support at support@m2mlogger.com.

3 Terminology

Term	Extract	Description
TCP/IP	Transmission Control Protocol/Internet Protocol	TCP (Transmission Control Protocol) is a set of rules used along with the Internet Protocol (IP) to send data in the form of message units between computers over the Internet.
HTTP	Hyper Text Transfer Protocol	HTTP is a set of rules for exchanging files (text, graphic images, sound, video and other multimedia files) on the Web.
DHCP	Dynamic Host Configuration Protocol	DHCP is a standard protocol that automates the process of configuring network hosts by allowing hosts to obtain IP addresses and configuration parameters.
Gateway		A device that makes it possible to transfer data between networks of different kind, e.g. MODBUS and Internet
Device		A MODBUS slave unit that is connected to LadderLOGIX
Tag		MODBUS register configured in LadderLOGIX.

4 How to use LadderLOGIX

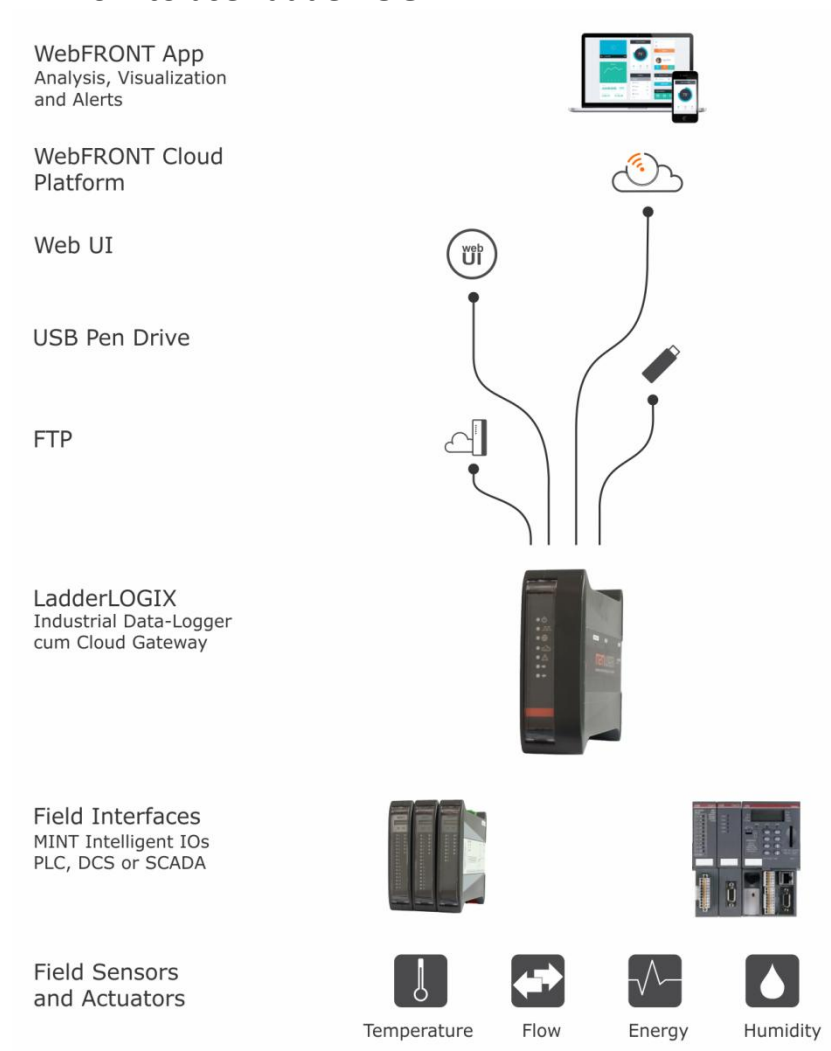


Figure 1 How it works

5 Quick Setup Instructions

- Make field connections to device. (See [Section 6.5](#))
- Discover the device using AutoDiscovery utility. (See [Section 7.1](#))
- Log on to Web UI. (See [Section 8.2](#))
- Go to **Control Panel > IO Mapping** screen and Configure and Save **Tags and Alerts**. (See [Section 9.3](#))
- Go to **Control Panel > Settings > System Settings**

5.1 As Cloud (WebFRONT) Data-logger

- Configure and Save **Mode** Setting. (See [Section 9.2.2.1](#))
 - Cloud Connector: **On**
 - Gateway Mode: **Send**
 - Loop: **Continuous**
 - Loop Interval: **10 sec**
 - Workflow: **Disabled**.
- Configure and Save **Server** Settings. (See [Section 9.2.2.1](#))
- Power Off and Power On the device.

5.2 As FTP Data-Logger

- Configure and Save **Mode** Setting. (See [Section 9.2.2.1](#))
 - Cloud Connector: **Off**
 - Gateway Mode: **Log**
 - Loop: **Continuous**
 - Loop Interval: **10 sec**
 - Workflow: **Enabled**.
- Configure and Save **Logger** Settings. (See [Section 9.2.2.8](#))
- Go to **Control Panel > Workflow**. (See [Section 9.4](#))
 - Add **Move File** Task.
 - Trigger: **Any**
 - Source Folder: **Data**
 - Source Filename: **tag[*].fdb**
 - Destination Folder: **Workflow**
 - Add **Custom** Task.
 - Trigger: **Any**
 - Executable: **Fdb2Csv.exe**
 - Arguments: **tag[*].fdb**
 - Timeout sec(s): **2**
 - Add **FTP** Task.

- Trigger: **Success**
 - Command: **STOR "tag[*].csv"**
- Add **Delete File** Task.
 - Trigger: **Any**
 - Folder: **Workflow**
 - Filename: **tag[*].fdb.ftp**
- Add **Delete File** Task.
 - Trigger: **Any**
 - Folder: **Workflow**
 - Filename: **tag[*].fdb.done**
- Save Workflow
- Power Off and Power On the device.

5.3 As USB Data-Logger

- Configure and Save **Mode** Setting. (See [Section 9.2.2.1](#))
 - Cloud Connector: **Off**
 - Gateway Mode: **Log**
 - Loop: **Continuous**
 - Loop Interval: **10 sec**
 - Workflow: **Enabled**.
- Configure and Save **Logger** Settings. (See [Section 9.2.2.8](#))
- Go to **Control Panel > Workflow**. (See [Section 9.4](#))
 - Add **Move File** Task.
 - Trigger: **Any**
 - Source Folder: **Data**
 - Source Filename: **tag[*].fdb**
 - Destination Folder: **Workflow**
 - Add **Custom** Task.
 - Trigger: **Any**
 - Executable: **Fdb2Csv.exe**
 - Arguments: **tag[*].fdb**
 - Timeout sec(s): **2**
 - Add **Move File** Task.
 - Trigger: **Any**
 - Source Folder: **Workflow**
 - Source Filename: **tag[*].csv**
 - Destination Folder: **USB**
 - Add **Delete File** Task.
 - Trigger: **Any**

- Folder: **Workflow**
 - Filename: **tag[*].fdb.done**
- Save Workflow
- Power Off and Power On the device.

5.4 As Local Web based Data-Logger

- Configure and Save **Mode** Setting. (See [Section 9.2.2.1](#))
 - Cloud Connector: **Off**
 - Gateway Mode: **Log**
 - Loop: **Continuous**
 - Loop Interval: **10 sec**
 - Workflow: **Enabled**.
- Configure and Save **Logger** Settings. (See [Section 9.2.2.8](#))
- Go to **Control Panel > Monitor Settings** and create a Monitor screen. (See [Section 9.5](#))
- Go to **Control Panel > Trend Settings** and create a Trend screen. (See [Section 9.6](#))
- Power Off and Power On the device.
- Go to **Control Panel > Monitors** or **Control Panel > Trends** to view real-time data visualization.

6 About LadderLOGIX

LadderLOGIX series comprises of advanced Industrial Cloud gateways that can extend any Industrial network to Cloud. They enhance your capability monitor, analyze and control the performance of your process remotely, from any place in world. These gateway devices can be easily interfaced with:

- Existing PLC, DCS or SCADA system with an MODBUS interface.
- MINT Intelligent IOs.

6.1 Features

- Remote monitoring.
- WebFRONT Web SCADA Cloud gateway.
- Web User Interface (Web UI).
- MODBUS RTU RS-485 & MODBUS Ethernet/IP.
- File Transfer Protocol (FTP).
- USB Pen drive data logger.
- Alerts: SMS, Email.
- Signal Scaling.
- Rugged design for rough Industrial conditions.
- Compact DIN rail mounting.
- Plug-n-play.
- Fail-safe for power failures.
- Over-The-Air (OTA) upgrades.
- 1KV isolation.

LadderLOGIX supports an RS-232 connection through a 9-pin DSUB, MODBUS RS-485 through screw terminals, USB pen drive through USB type A connector and 10/100 Mbps Ethernet through a standard Ethernet connector (RJ-45).

It can be configured via a user-friendly Web interface (Web UI).

6.2 Mounting on DIN rail

Snap On



Snap Off



6.3 Technical Specification

Communication	
Interface	2 Wire, EIA RS485
Protocol	MODBUS – RTU
Available Ports	1 x RS485 Multi-drop Serial Communication 1 x MODBUS Ethernet/IP
Baud Rate	9600, 19200, 38400, 57600, 115200

Status Indication	
LEDs	Power, Module Status, Internet, Cloud, Communication Status

Additional	MX PXA300	MX PXA1000
Processor	208 MHz	1Ghz Dual Core
Ethernet	10/100Mbps	10/100Mbps
USB Host	1 (USB 2.0)	1 (USB 2.0)
Real Time Clock	✓	✓
SNTP	✓	✓
Email (SMTP)	✓	✓
FTP	✓	✓
Web Server	✓	✓
GSM	-	-
GPRS	-	-
Internal Storage	3000 records	5000 records

Power	MX PXA300	MX PXA1000
Voltage	24VDC $\pm 10\%$	24VDC $\pm 10\%$
Current	< 1 A	< 1 A
Power Usage	4 Watts (max)	5 Watts (max)

Isolation	
Supply to Communication Port	1000 VAC RMS

Environmental	
Operating Temperature	0 to 55 °C

Storage Temperature	-10 to 70 °C
Humidity	30 to 95% RH non-condensing

Physical	
Dimensions	35(W) x 101(H) x 120(D) mm
Mounting	DIN Rail
Weight	250 gms approx.
Enclosure Material	Molded ABS

6.4 Mechanical

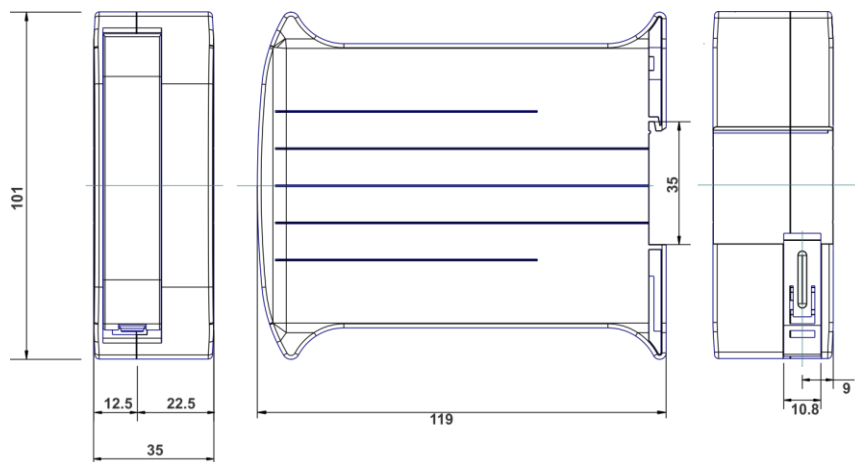


Figure 2 Physical Dimensions (mm)

6.5 Connections

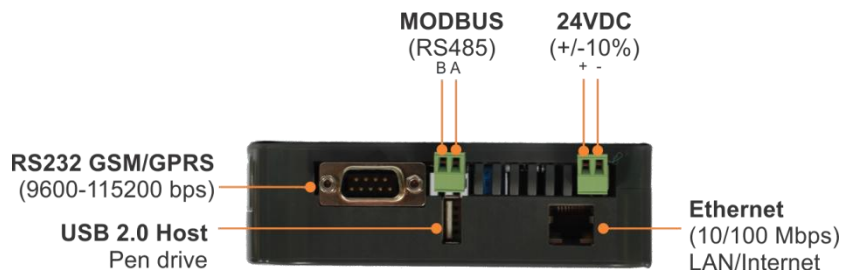


Figure 3 Field Connections

6.5.1 RS232 GSM/GPRS

The 9 pin DSUB – Male connector on the LadderLOGIX contains an RS232 interface. This port can be used to connect GSM/GPRS modem.

Pin	Function
1	CD (Carrier Detect)
2	RX (Receive)
3	TX (Transmit)
4	DTR (Data Terminal Ready)
5	GND (Ground)
6	DSR (Data Set Ready)
7	RTS (Request To Send)
8	CTS (Clear To Send)
9	RI (Ring Indicator)

6.5.2 MODBUS RS-485

Pin	Function
A	RS-485 Line A
B	RS-485 Line B

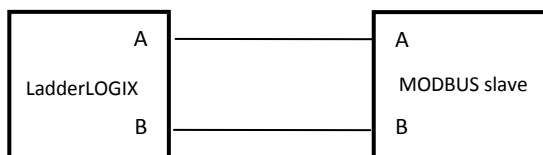


Figure 4 Normal wiring diagram for MODBUS terminal A and B

6.5.3 Power 24VDC

Pin	Function
+	+ 24 VDC
-	Ground

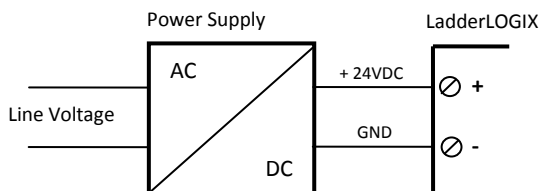


Figure 5 How to connect AC power

6.5.4 LED Indication



Name	Color	Function
Power	● Off	No Power
	● Orange	Power
Device Run	● Off	Not running
	● Orange	Boot-up or Error
	● Flashing Orange	Module running
Internet	● Off	No Internet
	● Orange	Internet Connected
WebFRONT	● Off	WebFRONT disconnected
	● Orange	WebFRONT Connected
Error	● Off	No Error
	● Red	Unrecoverable Error
	● Flashing Red	Error
Data Transmission	● Off	No Transmission
	● Flashing Orange	MODBUS Transmitting
Data Reception	● Off	No Reception
	● Flashing Orange	MODBUS Receiving

7 Getting Started

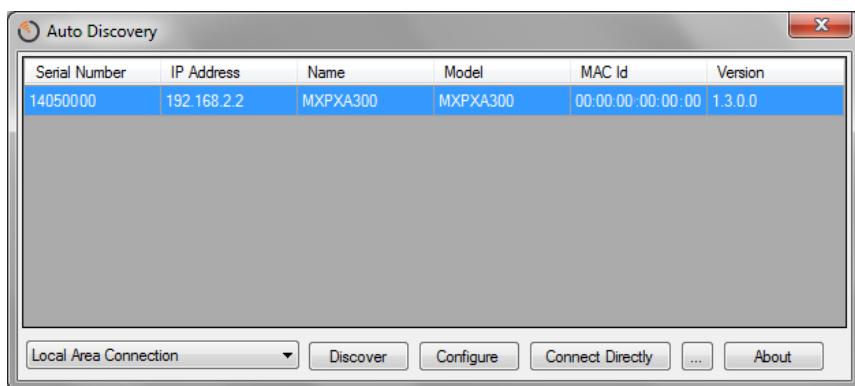
7.1 Auto Discovery utility

The Auto Discovery is a PC-based configuration utility to scan the Ethernet network for connected LadderLOGIX devices so that further configurations can be made to selected device.

7.1.1 Installation

Download and run **AutoDiscovery.exe** utility from:

<http://www.m2mlogger.com/downloads.htm>



7.1.2 Scanning devices connected over network

If your LadderLOGIX device(s) are connected over a network, then you should consider following steps:

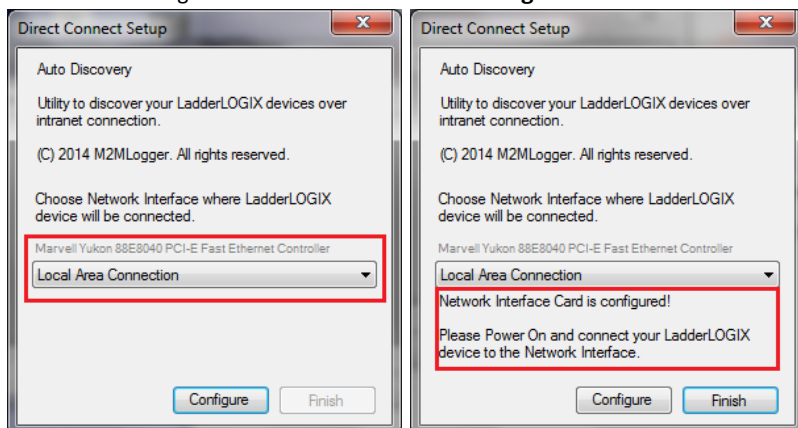
1. Power up LadderLOGIX device and connect LadderLOGIX with network.
2. Start **AutoDiscovery.exe** utility.
3. Select the relevant Network Adapter and select **Discover**.
4. To configuration a LadderLOGIX device click the **Configure** button to open up Web UI for the device in Web Browser.

7.1.3 Scanning devices connected directly

If your device is directly connected to Laptop via straight/cross Ethernet cable, then you should consider following steps:

1. Power up LadderLOGIX device. Do NOT connect Ethernet cable to laptop yet.

2. Start **AutoDiscovery.exe** utility.
3. Click **Connect Directly**.
4. On **Direct Connect Setup** dialogue, select the Network Adapter you will be connecting the LadderLOGIX and click **Configure**.



5. Click **Finish** upon successful configuration.
6. Now connect LadderLOGIX with Laptop, make sure data-logger is running.
7. Select the relevant Network Adapter and select **Discover**.
8. To configuration a LadderLOGIX device click the **Configure** button to open up Web UI for the device in Web Browser.



It your device is connected on LAN and you are having trouble discovering device using **AutoDiscovery.exe**, try disabling your Antivirus and/or Firewall.



AutoDiscovery.exe runs on Dot Net Framework 3.5. Please download and install Dot Net Framework 3.5 from <http://www.microsoft.com>.

8 Web UI overview

8.1 Browser Requirement

The web-pages are optimized for Internet Explorer version 9 or later and Google Chrome. Other browsers can work as well, but the web pages might appear differently and some functionality can be limited. The browser must be HTML 5 (with Canvas support) enabled, to use pages like the Monitors and Trends. If it is not, please upgrade to a HTML 5 enabled browser (visit: <http://www.html5test.com>).

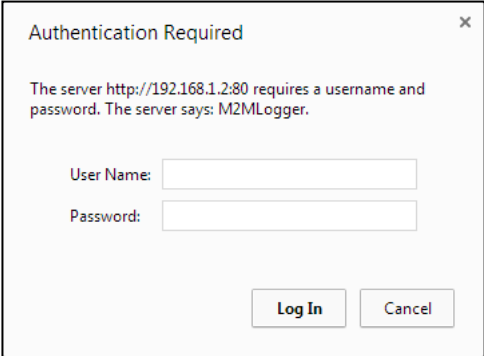
8.2 Log in

Open a web browser and enter the IP address of your device (if you know) or click on **Configure** button in Auto Discovery to launch Web Browser with appropriate IP address of device.

For example, if IP Address of device is **192.168.1.2** then you should enter the text below in the address field of the browser and press enter.

`http://192.168.1.2`

Now you should see the login screen:

A screenshot of a web browser's authentication dialog box. The title bar says "Authentication Required" with a close button (X) in the top right corner. The main text reads: "The server http://192.168.1.2:80 requires a username and password. The server says: M2MLogger." Below this text are two input fields: "User Name:" followed by a text box, and "Password:" followed by a text box. At the bottom right, there are two buttons: "Log In" and "Cancel".

Authentication Required

The server http://192.168.1.2:80 requires a username and password. The server says: M2MLogger.

User Name:

Password:

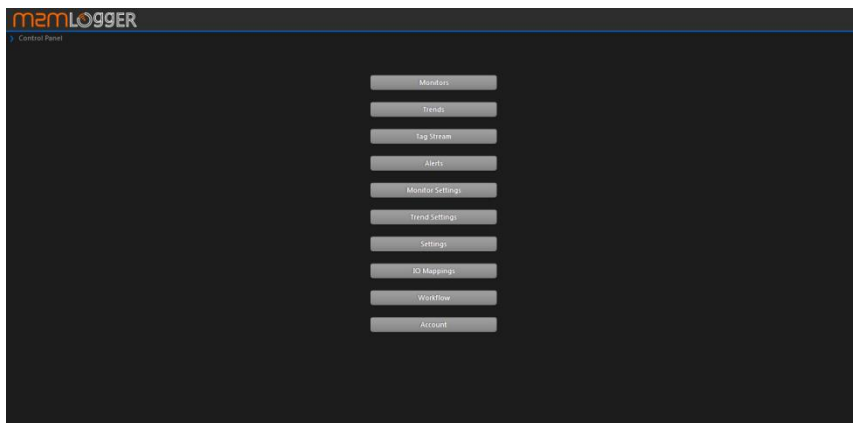
Username: **admin**

Default Password: **password**

9 User interface

9.1 Control Panel

Control Panel is the default landing screen for the device. Here you can navigate to different screens for configuration and SCADA visualizations.



9.2 Device Settings

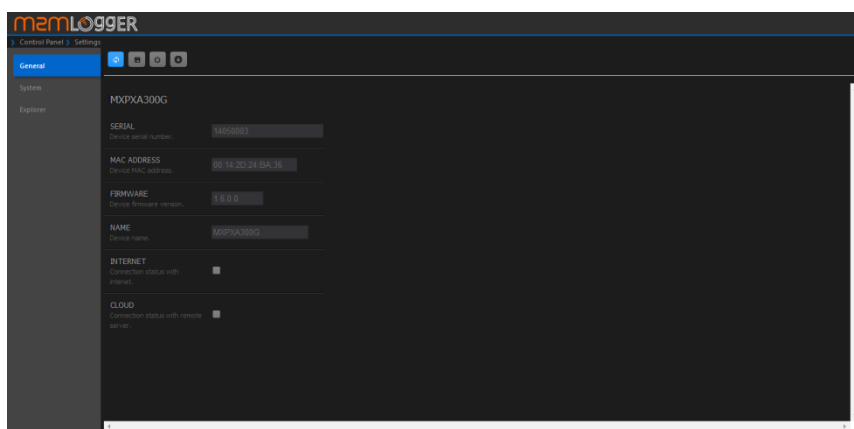
At device settings screens you can make configuration changes to device.

9.2.1 General

This tab shows the general settings for device.

9.2.1.1 Options

Option	Description
Serial	Device Serial Number.
MAC Address	Unique Device MAC address.
Firmware	Device Firmware version.
Name	Device Name; also reflected on network.
Internet	Internet connection status.
Cloud	WebFRONT connection status.

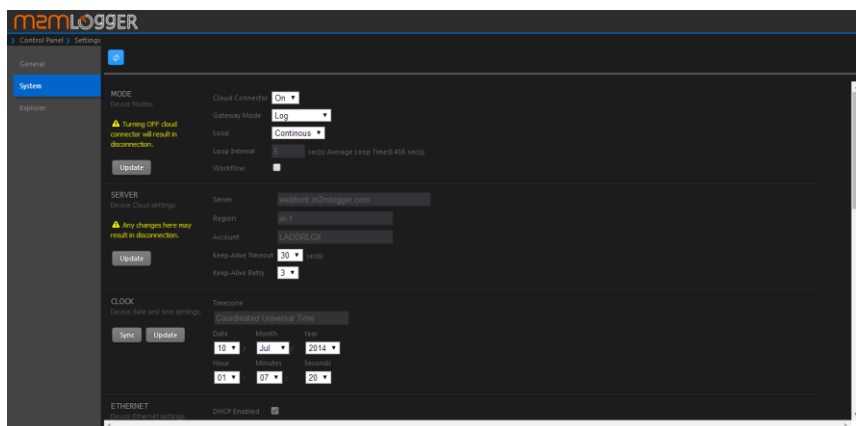


9.2.1.2 Toolbar

Button	Description
	Refresh General Settings.
	Save changes to Device Name.
	Restart device.
	Upgrade device firmware

9.2.2 System

This tab shows the system settings.



9.2.2.1 Mode

This setting lets the user configure mode for the device.

Option	Description
Cloud Connector	Switched On/Off the Cloud connector [Default On].
Gateway mode	Sets the gateway mode: Send – send values to Cloud Log – log values on local storage Send & Log – send values to Cloud and also log on local storage. [Default Send]
Loop	Sets the loop mode for device. Continuous – loops continuously. Triggered – one iteration; when triggered. [Default Continuous]
Loop Interval	Sets device loop interval. [Default 5 sec]
	 When the device is running, Average Loop is displayed to give an approximation of actual execution time.
Workflow	Enable/Disable Workflow.



It is advisable to always leave the device connected with Cloud. This will enable you to manage and configure the device online, without going to the field.

9.2.2.2 Server

This setting lets the user configure Cloud server for the device.

Option	Description
Server	WebFRONT Cloud server location. [Default webfront.m2mlogger.com].
Region	WebFRONT Cloud server regions. For improved performance select a region that represents best proximity to your device. [Default in-1]
Account	WebFRONT account name.
Keep-Alive Timeout	Duration to wait for WebFRONT keep-alive message. [Default 30 sec]
Keep-Alive Retry	Number of keep-alive retries to detect a closed WebFRONT connection. [Default 3 sec].

9.2.2.3 Clock

This setting lets user set the device calendar and clock.

Option	Description
Timezone	Device time zone. [Default Coordinate Universal Time].
Date	Current Date.
Month	Current Month.
Year	Current Year.
Hour	Current Hour in 24 hour format.
Minutes	Current Minutes.
Seconds	Current Seconds.

9.2.2.3.1 Toolbar

Button	Description
	Manually Sync clock with NTP server.

9.2.2.4 Ethernet

This is device Ethernet settings.

Option	Description
DHCP enabled	Ethernet Dynamic Host Configuration Protocol is enabled.
IP Address	Ethernet IP Address
Subnet Mask	Ethernet Subnet Mask.
Default Gateway	Ethernet default gateway
Hour	Current Hour in 24 hour format.
Minutes	Current Minutes.
Seconds	Current Seconds.



LadderLOGIX data logger does not support Static IP Address. It can only be connected to networks with Dynamic IP Address (i.e. network with DHCP server).

9.2.2.5 Modem

This setting lets user set modem options. An external modem, which is optional, can be a GSM/GPRS attached to the RS-232 9-pin DSUB interface.

Option	Description
Modem Mode	Set Modem Modes: None Message Data [Default None].
Baudrate	Baudrate settings in bps: 9600 19200 38400 57600 115200 [Default 115200]
Start bits	Frame start bit: 1 [Default 1]
Data bits	Frame data bits: 5 6 7 8 [Default 8]

Stop Bits	Frame stop bits: 1 1.5 2 [Default 1 stop bit]
Handshake	None Software Hardware Both [Default Hardware]
Parity	None Even Odd [Default None]
Timeout	Connection timeout.
User name	User name assigned by ISP.
Password	Password assigned by ISP.
Country Code	Country code to dial to the ISP.
Area Code	Area Code to dial to ISP.
Phone number	Phone number to dial to the ISP.
APN	Access Point Name, GPRS gateway that is given by SIM card operator.

9.2.2.6 SMTP

This setting lets user configure the SMTP settings to use while sending out email.

Option	Description
Account	Account name for the SMTP server.
Username	User name for the SMTP server.
Password	Password for the SMTP server.
Server	SMTP Server that is used for sending e-mail. Could be entered as IP address or domain name.
Port	SMTP server port.
SSL	SMTP server SSL settings: None SSL TLS/STARTTLS [Default None]

9.2.2.7 MODBUS

This sub menu item lets the user configure the MODBUS RS-485 communication interface. Make sure that the wiring is correct.

Option	Description
--------	-------------

UART Mode	Set MODBUS transmission mode: RTU. [Default RTU].
Baudrate	Baudrate settings in bps: 9600 19200 38400 57600 115200 [Default 9600]
Start bits	Frame start bit: 1 [Default 1]
Data bits	Frame data bits: 5 6 7 8 [Default 8]
Stop Bits	Frame stop bits: 1 1.5 2 [Default 1 stop bit]
Handshake	None Software Hardware Both [Default Hardware]
Parity	None Even Odd [Default None]
Timeout	The time that device will wait for a response from a slave before serial timeout will occur. [Default 1000]
Retry	Number of retry if an error occurs while querying data from MODBUS slave. [Default 3]

9.2.2.8 Logger

This setting lets user configure the device Tag logger.



This setting is only used if Gateway mode is Log or Send & Log (see [Section 9.2.2.1](#))

Option	Description
Mode	Set Tag Logger mode: Continuous On Change [Default Continuous].
Column Separator	Column Separator to be used by logger: Comma (,) Pipe () [Default Comma(,)]
Row Separator	Row Separator to be used by logger: Line Feed Carriage Return & Line Feed [Default Line Feed]
Rollover time	Rollover time for the logger when it rolls over the current file and starts writing to a new file. [Default 5 mins]
Encoding	Logger text encoding. [Default ASCII]



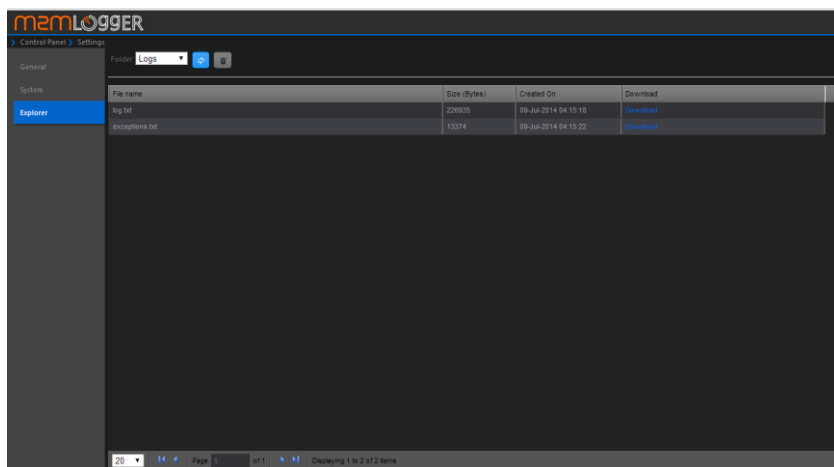
Logger always writes the file to **Data** directory.
Logger filename format: **tag[ddMMyyyyHHmmss].fdb**



tag.fdb is the active file on which Logger is writing. Any operation on **tag.fdb** may result in device malfunction

9.2.3 Explorer

This tab lists down the files being logged on data logger. User can download or delete the data files from this screen.



9.2.3.1 Data

This selection lists down the files under **Data** folder.

9.2.3.2 Logs

This selection lists down the files under **Logs** folder.

9.2.3.3 Workflow

This selection lists down the files under **Workflow** folder.

9.2.3.4 Toolbar

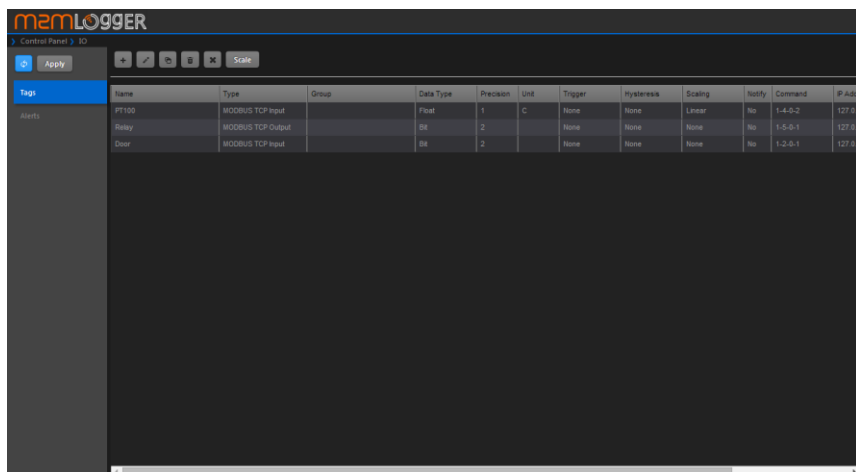
Button	Description
Folder	Folder to explore.
	Refresh Data files.
	Delete a data file

9.3 IO Mappings

At IO Mappings screen you define Tags (MODBUS queries) and Alerts.

9.3.1 Tags

You can configure MODBUS queries as Tags.



9.3.1.1 Toolbar

Button	Description
	Add a Tag.
	Edit a Tag.
	Clone a Tag
	Delete Tag(s).
	Delete a Tag Group – all the Tags within the same Group will be deleted.
	Add/Edit Scaling for Tag.

9.3.1.2 Defining Tag

The 'Manage Tag' dialog box is shown with the following configuration:

- Name:** PT100
- Type:** MODBUS TCP Input
- Function:** Read Input Register
- Trigger:** None
- Units:** C
- Precision:** 1
- Slave Id:** 1 (range 1 to 247)
- Data Type:** Float
- Address:** 0
- Data Points:** 2
- IP Address:** 127.0.0.1
- Port:** 4000
- Timeout:** 100 msec(s)
- Retry:** 1
- Hysteresis:** None
- Value:** 0.00
- Group:** (empty)
- Notify Server:** ☐

Buttons: Ok, Cancel

Option	Description
Name	Tag Name
Type	Tag Type: MODBUS UART Input MODBUS UART Output MODBUS TCP Input MODBUS TCP Output [Default MODBUS UART Input]
Function	MODBUS Functions: Read Coils Read Discrete Inputs Read Holding Registers Read Input Registers Write Single Coil Write Single Register [Default Read Input Register]
Trigger	Trigger for Tag to get recorded: None On Change [Default None]
Units	Tag units
Precision	Tag precision digits [0 to 6]
Slave Id	MODBUS Slave Id of slave device [1 to 247]
Data Type	Data Type of Tag: Bit Integer (16 bit)

	Integer (32 bit) Integer (64 bit) Float Swap Float [Default Integer (16 bit)]  Swap Float uses <u>word swap</u> floating notation.
Address	MODBUS Address of registers to read/write [0 to 65536]
Data Points	Data points to read/write (read-only)
IP Address	MODBUS slave IP Address. Applicable to MODBUS TCP Input and MODBUS TCP Outputs
Port	MODBUS slave Port. Applicable to MODBUS TCP Input and MODBUS TCP Outputs
Timeout	Time for which device will wait for MODBUS slave to reply. [Default 100 ms]
Retry	Number of retries after which MODBUS query errors out.
Hysteresis	Hysteresis for Tag values. Tag value only gets recorded if Hysteresis is satisfied. None Absolute Percentage [Default None]  Valid for Trigger is On Change
Value	Hysteresis Value to use for computing Tag Hysteresis.  Valid for Trigger is On Change
Group	Specify Group name to group Tags to execute MODBUS Bulk Query.
Notify Server	Check to send Tag value to server.

9.3.1.3 MODBUS Bulk Query

LadderLOGIX device can execute bulk query over MODBUS. Tags with Group are eligible for MODBUS Bulk Query

9.3.1.3.1 MODBUS UART

For MODBUS UART, Bulk Query is grouped by Tag Group, Slave Id and Function.

9.3.1.3.2 For MODBUS TCP

For MODBUS TCP, Bulk Query is grouped by Tag Group, IP Address, Host Port, Slave Id and Function.

9.3.1.3.3 Timeout

Bulk Query obtains Timeout value from **Device Settings > System > MODBUS > Timeout**. (See [Section 9.2.2.7](#))

9.3.1.3.4 Retry

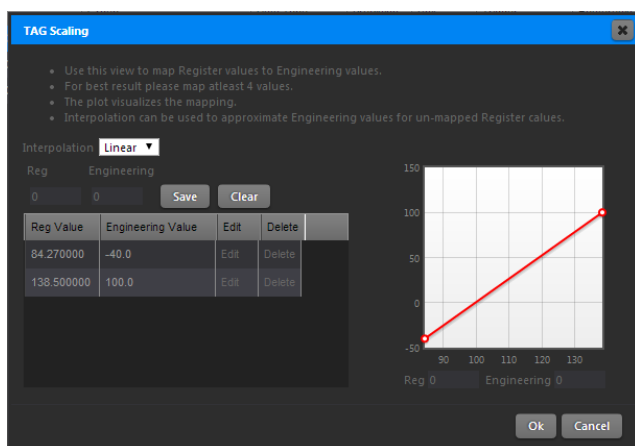
Bulk Query obtains Retry value from **Device Settings > System > MODBUS > Retry**. (See [Section 9.2.2.7](#))

9.3.1.4 Scale Tag

Scaling is used to convert measured values to engineering values. LadderLOGIX supports Linear Scaling.



Only Input Tags can be scaled.
Enter minimum 4 values for best result.



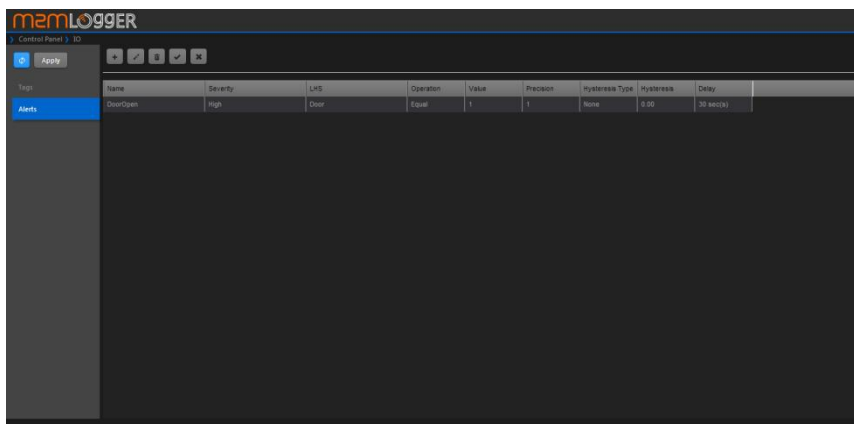
Option	Description
Reg	Register Value
Engineering	Engineering Value

i

Reg Value has precision of 6 decimal places
Engineering Value has same precision as that of Tag.
 A maximum of 10 data points can be entered.

9.3.2 Alerts

An Alert is an exception that has to be raised and notified when a Tag breaches its threshold.



9.3.2.1 Toolbar

Button	Description
	Add an Alert.
	Edit an Alert.
	Delete an Alert.
	Add/Edit Success actions.
	Add/Edit Failure actions.

9.3.2.2 Defining Alert

Manage Alert

Name:

Severity:

LHS:

Operation:

Value:

Precision:

Hysteresis:

Delay: sec(s)

Option	Description
Name	Alert Name
Severity	Alert Severity: Low Medium High Critical [Default Low]
LHS	Left Hand Side for Alert Comparison sys.reset – System Reset Alert sys.storage – System Storage Alert <Tags> – Input Tags
Operation	Alert Operation Equal Not Equal Greater Than Greater Than Equal Less Than Less Than Equal On Change – Raises alert if underlying Tag has changed [Default Equal]
Value	Right Hand Side Value to compare with.
Precision	Alert precision digits
Hysteresis	Hysteresis for Alert values. Alert get raised only if Hysteresis is satisfied.

	None Absolute Percentage [Default None]  Valid for sys.reset, sys.storag and Tags
Value	Hysteresis Value to use for computing Hysteresis.  Valid for sys.reset, sys.storag and Tags
Delay Sec(s)	Delay period to wait before raising the Alert.  Alert condition should hold True through the delay period. Otherwise Alert is reset.

9.3.2.3 Alert Actions

Various actions such as: Notify Server, SMS, Email, Update Tags etc. can be performed based on Success/Failure of an Alert. To configure select an Alert and click a relevant action button.

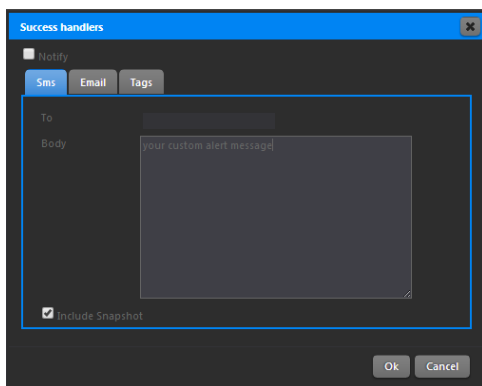
9.3.2.3.1 *Notify*

To send notification to WebFRONT server, check Notify checkbox in the Alert Action handler.



9.3.2.3.2 *SMS*

User can choose to send SMS notification for an Alert.



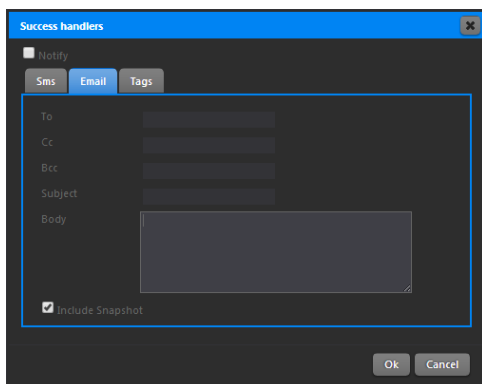
Option	Description
To	Recipients' mobile numbers separated by Semi Colon (;)
Body	Custom message to be included in SMS
Include Snapshot	Include Alert Values snapshot.



Configure Modem to Messaging mode. See [Section 0](#)
SMS will only be sent if a GPRS modem is detected by device.

9.3.2.3.3 Email

User can choose to send Email notification for an Alert.



Option	Description
To	Recipients' emails separated by Semi Colon (;)

Cc	Carbon Copy Recipients' emails separated by Semi Colon (;)
Bcc	Blank Carbon Copy Recipients' emails separated by Semi Colon (;)
Subject	Custom Alert Email Subject
Body	Custom message to be included in SMS
Include Snapshot	Include Alert Values snapshot.



Internet Connection required for sending email. See [Section 0](#)
Valid SMTP settings required. See [Section 9.2.2.6](#)

9.3.2.3.4 Tag

User can choose to update Output Tags as an alert action. Updates to Tag are immediately sent to MODBUS slaves.



Helpful when preventive actions have to be taken in response to an alert.

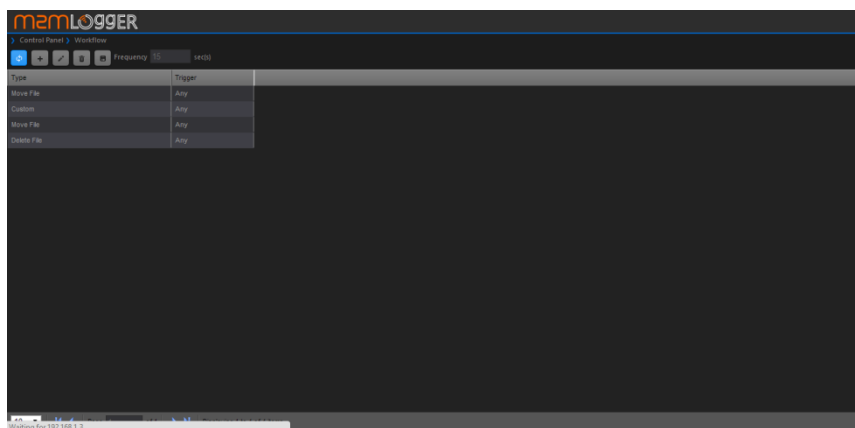
Option	Description
Tag	Select a Tag you wish to update.
Value	Provide a value to update to the Tag.

9.4 Workflow

Workflow is collection to Tasks that execute in user-defined sequential order. User can configure custom workflow from this screen.



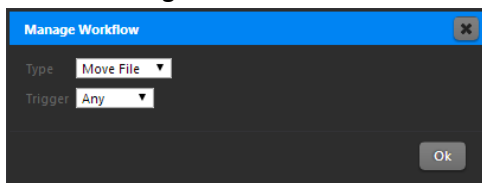
Enable Workflow from option Workflow in [Section 9.2.2.1](#)



9.4.1 Toolbar

Button	Description
	Refresh Workflow
	Add a Workflow Task.
	Edit a Workflow Task.
	Delete a Workflow Task.
	Save Workflow.
Frequency	Frequency, in seconds, to run Workflow.

9.4.2 Manage

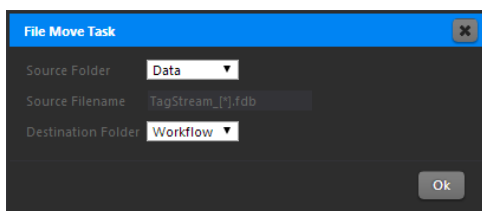


Option	Description
Type	Type of Workflow Tasks Move File FTP Delete File Custom Network Move [Default Move File]
Trigger	Trigger condition to start the task based on result of previous task result. Any – Starts a task irrespective of previous task being success/failure Success – Starts a task only if previous task was success. Failure – Starts a task only if previous task was failure. [Default Any]

9.4.3 Tasks

9.4.3.1 Move File

Move a file from source folder to a destination folder.



Option	Description
Source Folder	Source folder to copy file from. Data Workflow [Default Data]
Source Filename	File name of source filename. Filename can contain wildcards.

	See Section 10.1
Destination Folder	Source folder to copy file from. Workflow USB [Default Workflow]

9.4.3.2 FTP

This task transfers a file over to FTP server.

Option	Description
FTP Server	File Transfer Server name
Port	File Transfer Server Port
Username	Username for logging on to FTP server
Password	Password for logging on to FTP server.
Command	FTP command to run. See Section 10.2



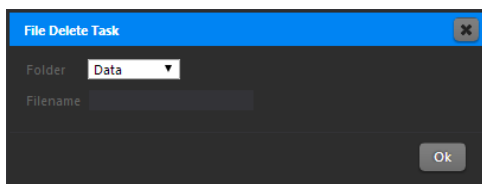
Only simple FTP supported.
SSL is NOT supported.



FTP files will be picked from **Workflow** folder only.
After successful FTP, file is renamed to **<original-filename>.ftp**

9.4.3.3 Delete File

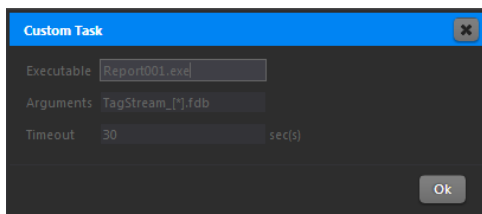
This task deletes a file from source location.



Option	Description
Folder	Source folder to copy file from. Data Workflow USB [Default Data]
Filename	File name of source filename. Filename can contain wildcards. See Section 10.1

9.4.3.4 Custom

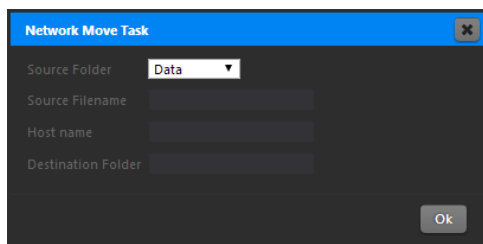
This is a custom task and should only be configured after consultation from M2MLogger.



Option	Description
Executable	Name of Custom Executable to run.
Arguments	Arguments to Custom Executable file. Filename can contain wildcards. See Section 10.1
Timeout sec(s)	Time to wait for Custom Executable to return. The Custom Executable will be terminated if does not returns within timeout duration.

9.4.3.5 Network Move

This task moves the file from source folder to a network folder.



Option	Description
Source Folder	Source folder to copy file from. Data Workflow [Default Data]
Source Filename	File name of source filename. Filename can contain wildcards. See Section 10.1
Host name	Hostname of network computer.
Destination Folder	Shared folder on network compute where files have to be copied.



Make sure network computer is reachable by data-logger.



Shared folder should have exclusive Read/Write/Delete rights for **Everyone** on network.

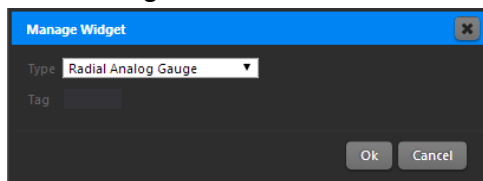
9.5 Monitor Settings

Monitor Settings is a WYSIWYG (What You See Is What You Get) designer, where you can design visualization screen with gauges.



Option	Description
Refresh Rate	Rate at which data is refreshed from server.
Size	Canvas Size in Width x Height for Monitor View.

9.5.1 Widgets



Option	Description
Type	Visualization Widget Types: Radial Analog Gauge Rectangular Analog Gauge VU Meter Thermometer Liner Meter Digital Meter Led Tank Power Switch – Use this to toggle Output [Default Radial Analog Gauge]
Tag	Tag name to bind with Widget.

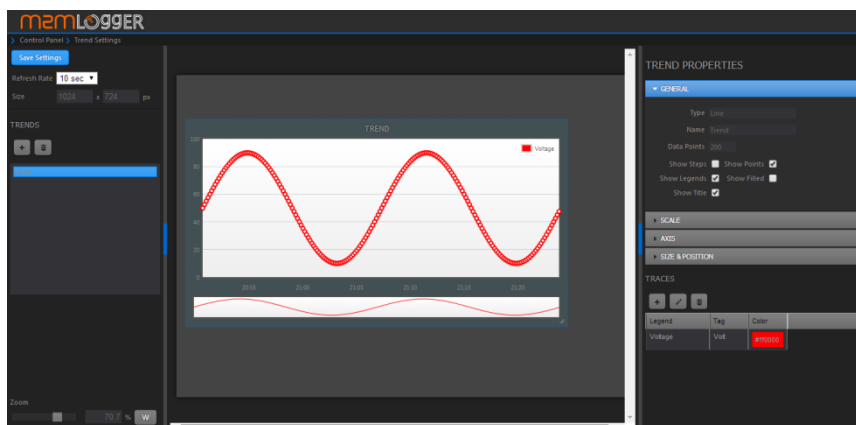
9.5.2 Widget Properties

Option	Description
--------	-------------

<i>General</i>	
Type	Type of Widget
Tag	Tag associated with Widget
Color #	Hexadecimal RGB color for the Widget.
<i>Scale</i>	
1:X	Scales up/down Widget values by 1:X
<i>Values</i>	
Min	Minimum value for Widget
Max	Maximum value for Widget
<i>Steps</i>	
Major	Major Ruler Steps for Widget.
Minor	Minor Ruler Steps for Widget.
<i>Range</i>	
Green	Maximum Rule Value for Green range marker.
Yellow	Maximum Rule Value for Yellow range marker.
Red	Maximum Rule Value for Red range marker.
<i>Size & Position</i>	
Height	Height of Widget in pixels.
Width	Width of Widget in pixels.
Left	Left position of Widget in pixels.
Top	Top position of Widget in pixels.
<i>Title</i>	
Text	Title text
Dock	Docking position for Title text: top center – show title on Top-Center of Widget bottom center – show Title on Bottom-Center of Widget
Visible	Show/hide Title on Widget

9.6 Trend Settings

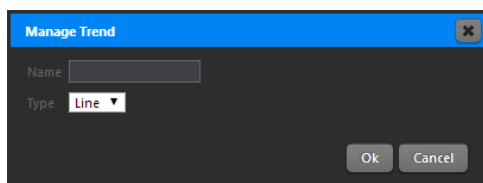
Trend Settings is a WYSIWYG (What You See Is What You Get) designer, where you can design visualization screen with Trending charts.



Option	Description
Refresh Rate	Rate at which data is refreshed from server.
Size	Canvas Size in Width x Height for Monitor View.

9.6.1 Trend

A Trend is a graphical representation of Time series data. One Trend can contain multiple Traces. Each Trace represents one Tag.



Option	Description
Name	Name of Trend.
Type	Visualization Trend Types: Line [Default Line]

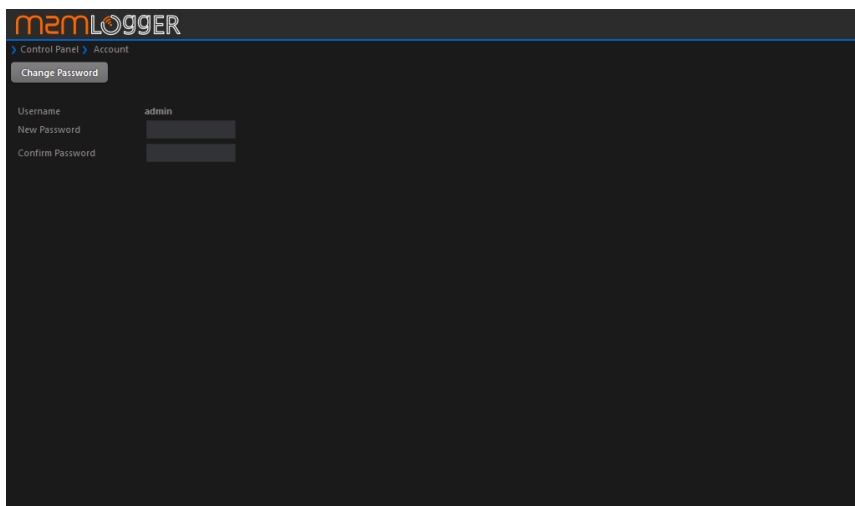
9.6.2 Trend Properties

Option	Description
--------	-------------

<i>General</i>	
Type	Type of Trend
Name	Name of Trend.
Data Points	Maximum number of Data points to display in Trend chart.
Show Steps	Connect line chart values as Steps.
Show Points	Show/Hide Point marker for data Points.
Show Legends	Show/Hide Legends for Traces
Show Filled	Show/Hide filled area under chart.
Show Title	Show/Hide Title for chart.
<i>Scale</i>	
1:X	Scales up/down Widget values by 1:X
<i>Axis</i>	
Y Axis Min	Minimum value for Y Axis
Y Axis Max	Maximum value for Y Axis
<i>Size & Position</i>	
Height	Height of Widget in pixels.
Width	Width of Widget in pixels.
Left	Left position of Widget in pixels.
Top	Top position of Widget in pixels.
<i>Traces</i>	
Legend	Legend for Trace
Tag	Tag to bind with Trace.
Color #	Hexadecimal RGB color for the Trace.

9.7 Account

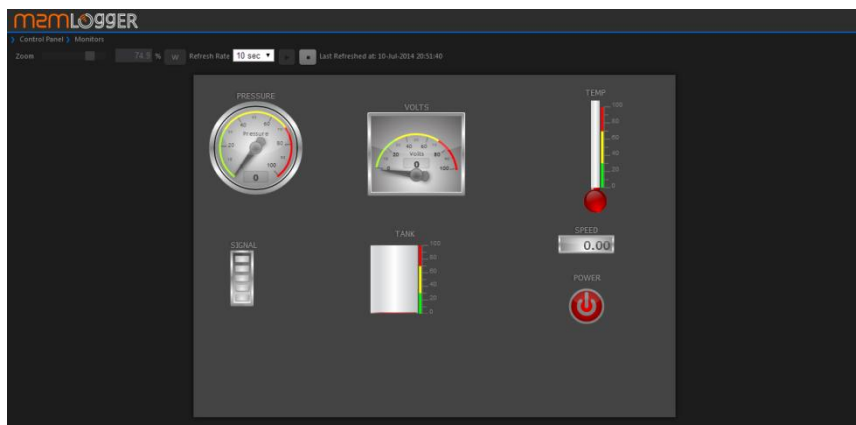
You change your account password from this screen. Type **New Password** and **Confirm Password** and Click **Change Password**.



The screenshot shows the 'memLOGGER' web interface for changing a password. At the top, there is a breadcrumb trail: 'Control Panel > Account'. Below this is a button labeled 'Change Password'. The form contains three input fields: 'Username' with the value 'admin', 'New Password', and 'Confirm Password'. The 'New Password' and 'Confirm Password' fields are currently empty and have a dark gray background.

9.8 Monitors

Monitor screen lets you visualize logged Tag values as Gauges on a real-time basis.



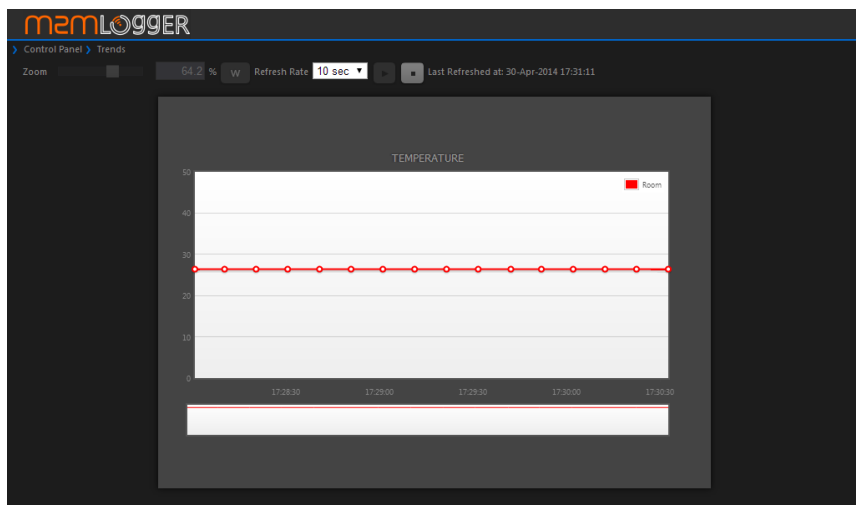
Double clicking a **Power Switch** will toggle the output.

9.8.1 Toolbar

Button	Description
Refresh Rate	Refresh Rate for Monitor screen.
	Start polling data from server.
	Stop polling data from server.
Last Refreshed	Timestamp of last refresh.

9.9 Trends

Trend screen lets you visualize logged Tag values as Trending chart on a real-time basis.



9.9.1 Toolbar

Button	Description
Refresh Rate	Refresh Rate for Trends screen.
	Start polling data from server.
	Stop polling data from server.
Last Refreshed	Timestamp of last refresh.

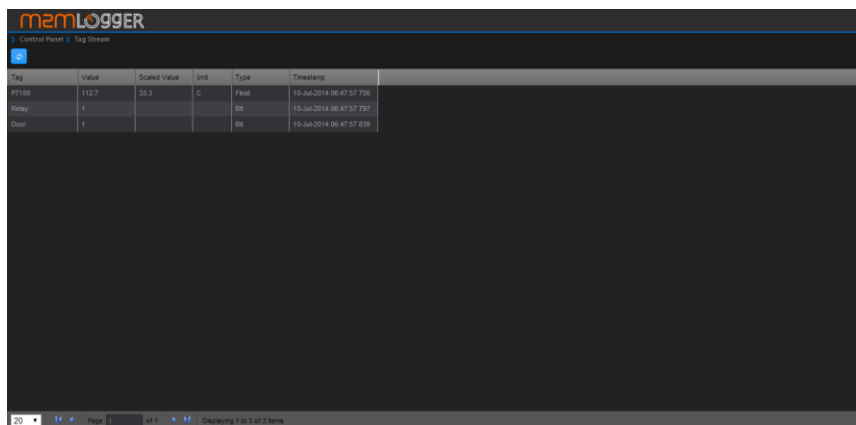
9.9.2 Zoom

To zoom the Trend chart, select the desired area in the Zoom panel at the bottom of Trend chart



9.10 Tag Stream

Tag Stream screen tabulates the latest Tag values. To refresh values click on **Refresh** button.



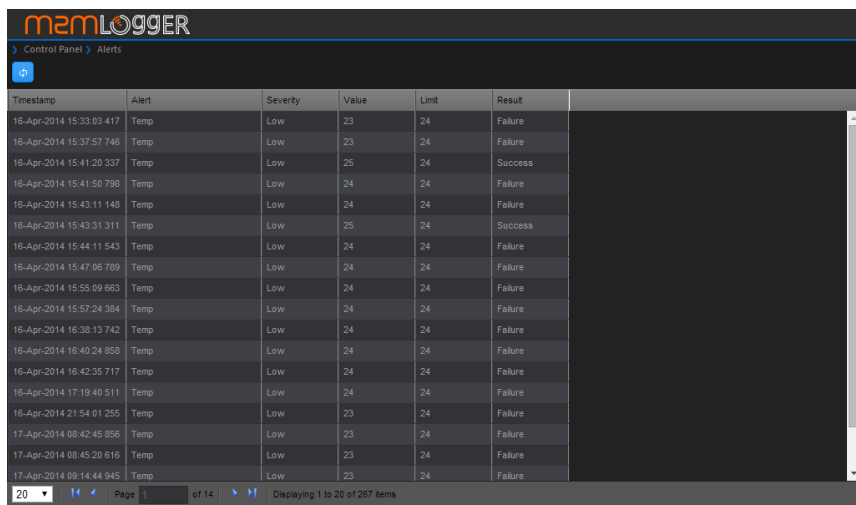
Tag	Value	Scaled Value	Unit	Type	Timestamp
PT100	112.7	33.3	C	Float	15-Jul-2014 06:47:57 796
Motor	1			Bit	15-Jul-2014 06:47:57 797
Door	1			Bit	15-Jul-2014 06:47:57 839

9.10.1 Toolbar

Button	Description
	Refresh Tag Stream data.

9.11 Alerts

Alert screen tabulates all the Alerts raised by device.



Timestamp	Alert	Severity	Value	Limit	Result
16-Apr-2014 15:33:03.417	Temp	Low	23	24	Failure
16-Apr-2014 15:37:57.746	Temp	Low	23	24	Failure
16-Apr-2014 15:41:20.337	Temp	Low	25	24	Success
16-Apr-2014 15:41:50.798	Temp	Low	24	24	Failure
16-Apr-2014 15:43:11.148	Temp	Low	24	24	Failure
16-Apr-2014 15:43:31.311	Temp	Low	25	24	Success
16-Apr-2014 15:44:11.543	Temp	Low	24	24	Failure
16-Apr-2014 15:47:06.789	Temp	Low	24	24	Failure
16-Apr-2014 15:55:09.863	Temp	Low	24	24	Failure
16-Apr-2014 15:57:24.384	Temp	Low	24	24	Failure
16-Apr-2014 16:38:13.742	Temp	Low	24	24	Failure
16-Apr-2014 16:40:24.858	Temp	Low	24	24	Failure
16-Apr-2014 16:42:35.717	Temp	Low	24	24	Failure
16-Apr-2014 17:19:40.511	Temp	Low	24	24	Failure
16-Apr-2014 21:54:01.255	Temp	Low	23	24	Failure
17-Apr-2014 08:42:45.886	Temp	Low	23	24	Failure
17-Apr-2014 08:45:20.616	Temp	Low	23	24	Failure
17-Apr-2014 09:14:44.945	Temp	Low	23	24	Failure

20 Page 1 of 14 Displaying 1 to 20 of 287 items

9.11.1 Toolbar

Button	Description
	Refresh Alerts data.

10 Appendix

10.1 File name wildcards

Filename can contain wildcards:

10.1.1 [*] - Asterisk

Substitute for zero or more characters.

Example

tag[*].fdb

Successful Match: **tag0123.fdb**

Failed Match: **tag.fdb**

10.2 FTP Commands

10.2.1 STOR

Accept the data and to store the data as a file at the server site

Syntax

STOR "filename"

filename is the source file name. See [Section 10.1](#)



FTP files will be picked from **Workflow** folder only.



The destination filename will always be same as source file name.

Example

STOR "tag_[*].fdb"

11 Troubleshoot

11.1 Power LED not ON

If power is connected to device and Power LED does not glow, this means:

- Either, rated power is not connected. (See [Section 6.3](#))
- Or, reverse polarity connection. (See [Section 6.5.3.](#))

11.2 Both Run and Error LEDs blinking

If both Run and Error LEDs are blinking, this means device is running out of memory.

Please consult M2MLogger Support for further assistance.

11.3 Run LED ON and Error LED blinking

If Run LED is ON and Error LED is blinking, this means the device Clock is reset. Under such a condition device does not executes the Loop.

Please connect the device with Internet and Synchronize the Clock as per [Section 9.2.2.3.](#)

11.4 Run LED OFF and Error LED ON

If Run LED is OFF and Error LED is ON, this means the device has encountered an unrecoverable error. Generally LadderLOGIX device will restart under such a condition. But if the problem persists on three consecutive restarts then device shows the status until remedial action is taken.

Please consult M2MLogger Support for further assistance.

11.5 Connecting internet with Static IP Address

LadderLOGIX Data-logger only supports Dynamic IP Address, i.e. it needs a DHCP server to allocate IP Address. If you wish to install data-logger in a network where DHCP server is not available, consider installing a commercially available multi-port router (with DHCP capability) between data-logger and network. You should configure the router with appropriate Static IP Address.

Please consult M2MLogger Support for further assistance.

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